



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------------|
| 10/578,632 | 05/09/2006 | Rohit Garg | US030481US | 1427 |
| 28159 7590 07/02/2009 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 Briarcliff Manor, NY 10510-8001 | | | EXAMINER REARDON, ROCHELLE D | |
| | | | ART UNIT 3737 | PAPER NUMBER |
| | | | MAIL DATE 07/02/2009 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/578,632 | Applicant(s) GARG ET AL. | |
| | Examiner ROCHELLE REARDON | Art Unit 3737 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 14-18 are objected to because of the following informalities: claims 14-18 fail to set forth any further structural limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 10 discloses "a source" in lines 4 and 6, which is not defined in the specification.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-3, 5-9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because these are method or process claims that do not transform underlying subject matter (such as an article or materials) to a different state or thing, nor are they tied to another statutory class (such as a particular machine). See Diamond v. Diehr, 450 U.S. 175, 184 (1981) (quoting Benson, 409 U.S.

Art Unit: 3737

at 70); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978) (citing *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)). See also *In re Comiskey*, 499 F.3d 1365, 1376 (Fed. Cir. 2007) (request for rehearing *en banc* pending). See *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc). Claims 1-3, and 5-9 fail to set forth either a structure capable of acquiring and displaying an anatomical flow image or a parametric image, or a transformation of the acquired and displayed images.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10 and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwartz (5,720,291).

Regarding claims 1, 10 and 14-18, Schwartz discloses a method and a diagnostic imaging system for simultaneously displaying a parametric diagnostic image and an anatomical diagnostic image of the region of interest corresponding to the parametric diagnostic image, comprising: a source and acquiring an anatomical flow image of a region of interest of a subject comprising tissue containing blood flow; a source and acquiring a parametric image of the region of interest of the subject; and a display coupled to the source and displaying the parametric image in anatomical registration with the anatomical flow image (abstract; col.2, ll.9-24), a display processor coupled to the display which acts to set the relative opacity of the registered diagnostic

Art Unit: 3737

flow image and parametric image; and a user control coupled to the display processor (col.3, ll.62-65; col.4, ll.58-60; claim 17), wherein the relative opacity of the registered parametric image and anatomical flow image is variable (col.3, ll.43-49).

Regarding claim 19, Schwartz discloses wherein the user control further comprises a plurality of separate user controls by which a user can set the opacity of the parametric image and the registered diagnostic image (col.2, ll.9-24; col.3, ll.43-49; col.4, ll.58-61; claim 17).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2-4, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz (5,720,291) in view of Pedrizzetti et al (2004/0254440).

Regarding claims 2-4, 11 and 12, Schwartz discloses the invention substantially as claimed but fails to disclose acquiring a parametric image comprising a source and acquiring a parametric image of a characteristic of blood flow perfusion of the tissue in the region of the body; as well as further comprising directing a flow of contrast agent to the region of interest of the subject.

However, Pedrizzetti et al teach in the same medical field of endeavor acquiring a parametric image comprising acquiring a parametric image of a characteristic of blood flow perfusion of the tissue in the region of the body; as well as further comprising directing a flow of contrast agent to the region of interest of the subject ([0003];[0010];[0044]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of displaying a parametric diagnostic image and an anatomical diagnostic image of Schwartz with acquiring a parametric image of a characteristic of blood flow perfusion and directing a flow of contrast agent to the region of interest of the subject. Doing so would provide an increased ability to view blood flow and identify blood flow perfusion.

6. Claims 5-9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz (5,720,291).

Regarding claims 5 and 6, Schwartz discloses the invention substantially as claimed but fails to disclose varying the relative opacity of the registered parametric image and anatomical flow image in a continuous manner as well as in a stepwise manner.

However, Schwartz teaches a user entering rendering parameters by means of a user interface in which each type of image information will be processed including opacity values (col.4, ll.51-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the user control of Schwartz to include varying the relative opacity of the registered parametric image and anatomical flow image in a continuous manner as well as in a stepwise manner. Doing so would provide viewing of characteristic of both parametric and anatomical flow images, or at varying opacities as desired.

Regarding claims 7-9, Schwartz discloses wherein varying the relative opacity further comprises varying the opacity within a range extending from an opaque anatomical image and a transparent parametric image; to an opaque anatomical image overlaid with an opaque parametric image; to a transparent anatomical image and an opaque parametric image; and within a range which includes an opacity setting in which a translucent parametric image is shown in registration with a substantially opaque anatomical image (col.3, ll.44-47; col.4, ll.63-65).

Regarding claim 13, Schwartz discloses the invention substantially as claimed but fails to disclose wherein the display processor further comprises an opacity processor which acts to set the relative opacity of the registered diagnostic image and parametric image within a range varying from an opaque diagnostic image and a transparent parametric image; to an opaque diagnostic image overlaid with an opaque parametric image; to a transparent diagnostic image and an opaque parametric image;

Art Unit: 3737

and a user can set the relative opacity of the images to one of a discrete number of relative opacity settings.

However, Schwartz teaches the user ability to enter values for the opacity and contrast to be imparted to each type of image information (col.4, ll.58-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify display processor of Schwartz to include an opacity processor. Doing so would provide the ability to make automatic changes in opacity of the data types in order to enhance data contrast.

Response to Arguments

7. Applicant's arguments filed April 2nd, 2009 have been fully considered but they are not persuasive. Regarding claims 1 and 10, Applicant argues that the method and system of Schwartz is directed solely to 3D imaging; however, Applicant fails to disclose the limitation that the method and system must be capable of being applied to both 2D and 3D images; therefore the fact that Schwartz is directed to 3D images is not persuasive in precluding the reference from reading on claims 1 and 10. Further, Applicant argues that, "the two images are of the same region, not of adjacent of different regions;" however, Schwartz discloses that the two images are of the same region (col.2, ll.54-63). In addition, Applicant argues that Schwartz fails to disclose an anatomical blood flow image comprising tissue containing blood flow, and a parametric image; however, Schwartz discloses two types of images: a blood flow image including blood flow vasculature which includes tissue, and a tissue image including specific parameters (col.2, ll.25-38; col.4, l.66-col.5, l.25).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROCHELLE REARDON whose telephone number is (571)270-7104. The examiner can normally be reached on Monday thru Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROCHELLE REARDON/
Examiner, Art Unit 3737

/Ruth S. Smith/
Primary Examiner, Art Unit 3737

Application/Control Number: 10/578,632
Art Unit: 3737

Page 9